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INDUSTRIAL ESTATE PLANS AND PROJECTS IN LATIN AMERICAN COUNTRIES

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TABLE OF CONTENTS

		Page
I.	GENERAL SURVEY	1
II.	COUNTRY DATA	12
	Argentina	12
	Brazil	15
	Chile	16
	Colombia	17
	Costa Rica	18
	Ecuador	19
	Jamaica	21
	Mexico	24
	Netherlands Antilles	27
	Nicaragua	28
	Panama	29
	Peru	30
	Puerto Rico	32
	Trinidad and Tobago	37
	Venezuela	40

INDUSTRIAL ESTATE PLANS AND PROJECTS IN LATIN AMERICAN COUNTRIES

I. GENERAL SURVEY

In 1964, the United Nations Secretariat sent a questionnaire on industrial estates to the Governments of those Member and non-member States which, according to available information, had plans or projects in this field. The replies to the questionnaire, and information derived from other sources served as a basis for comparative surveys of international and regional scope. 1/ One of these surveys is contained in the present report; it reviews industrial estate plans and projects in a number of Latin-American countries - Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Jamaica, Mexico, Netherlands Antilles, Nicaragua, Panama, Peru, Trinidad and Tobago and Venezuela. Although Puerto Rico is not part of the region of the Economic Commission for Latin America, its experience is also discussed in this report, in particular because of its admitted influence on the development of industrial estates and industrial areas in certain countries of the region.

The survey is concerned with different types of industrial clustering which, for the sake of uniformity and consistency, are referred to, as proposed in other United Nations documents 2/, as "industrial estates" and "industrial areas". The main distinction between the two is that the latter offer only improved sites, while the former feature, in addition, standard factory buildings built in advance of demand and a variety of services.

1/ See Industrial Estates: Policies, Plans and Progress - A Comparative Analysis of International Experience (United Nations publication, Sales No. 66.II.B.16); "Industrial Estate Plans and Projects in African Countries" in Industrial Estates in Africa (Sales No.: 66.II.B.2). A similar survey relating to some European and other countries has been prepared by the Secretariat for submission to a Consultative Group on Industrial Estates and Industrial Areas, to be held at Geneva in October 1966. Information on industrial estates in certain countries of Asia and the Far East is contained in Industrial Estates in Asia and the Far East (Sales No.: 62.II.B.5).

2/ See, in particular, "Types of Industrial Estates".

This paper has been prepared by the Small-Scale Industry Section, Centre for Industrial Development.

In the group of countries under review, industrial estates with standard factories built in advance of demand have been set up and are in operation only in Jamaica (Kingston), Puerto Rico (thirteen estates in or near San Juan, Mayaguez, Ponce, Caguas and Arecibo) and Venezuela (Valencia and Barquisimeto). In all three countries, industrial estate authorities also offer, usually on the same tracts, a choice of improved sites, multi-factory buildings and special factory buildings erected by the authorities to meet the needs and specifications of individual enterprises. Sites and factories are also made available outside of industrial estates. Most of the industries set up on the estates are of medium to large size.

As will be seen below, it is the industrial area which, in all other countries, is thus far the prevailing form of industrial clustering. In a few countries, however, especially in insular countries where the experience of Puerto Rico has been given close attention, certain facilities similar to those offered on industrial estates are or are being made available. Thus, in the Netherlands Antilles, the sponsoring authority may construct custom-built factories for rent to the occupants; in Trinidad and Tobago, as an experiment, a standard factory will be constructed in advance of demand in one of the larger industrial areas, and consideration is being given to setting up also a central maintenance and repair shop.

In a number of countries, industrial estate projects for small-scale industries are at various stages of study or planning. In Argentina, preliminary studies have been made to set up an industrial estate at Córdoba. In Brazil, consideration is being given to establishing a first industrial estate, probably near Recife, as part of the industrialization programme for the north-eastern region. In Chile, studies have been undertaken for setting up industrial estates for small-scale industries at Maipú, near Santiago, and at Osorno. In Colombia, efforts are being made by private groups, with the assistance of a United Nations expert, to set up industrial estates at Cáli, Sogamoso and Manizales. Feasibility studies for estates at various locations have been carried out in Costa Rica. In Ecuador, a plan has been drawn up to set up an industrial estate and industrial area at Cuenca. A

feasibility study has been made for an industrial estate in the Netherlands Antilles and a detailed plan has been prepared for an estate near Managua, Nicaragua. In most of these projects, standard factory buildings as well as improved sites are likely to be offered.

Industrial areas for industries of all size are in operation in Brazil (Contagem, Santa Luzia, near Belo Horizonte), Mexico (Sahagún, La Laguna, Irapuato, Querétaro), the Netherlands Antilles (Aruba, Bonaire, Curaçao), Panama (Colón), Peru (Arequipa), Trinidad and Tobago (East Dry River, Sea Lots, O'Meara, near Port-of-Spain, Plaisance, near San Fernando, Milford, in Tobago) and Venezuela, (Maracaibo, La Vittoria, Cagua, Ciudad Guayana). As already noted, improved sites may be obtained on all industrial estates of Jamaica, Puerto Rico and Venezuela. In Argentina, studies have been made for the establishment of a large industrial complex in the San Nicolás - Santa Fé region, including five industrial areas (Villa Gobernador Gálvez, Villa Constitución, San Lorenzo, Santo Tomé and San Nicolás).

All existing industrial areas offer sites with power, water, sewerage, drainage, internal and access roads and sometimes railway sidings. In some projects combining estate and area, construction of factory buildings is undertaken by the sponsoring authority, but in most other cases, it is the responsibility of the occupant and should be carried out by private contractors, in accordance with building codes laid down by the sponsor. With a few exceptions, for example in Venezuela, no special financing facilities for construction are made available by the sponsoring authority and/or by closely-associated credit institutions, and the occupant has to obtain his financing separately. In most countries, however, there are public and commercial institutions providing finance to industry, though credit is usually more readily available for large and medium-sized projects than for the smaller ones.

In three insular countries - the Netherlands Antilles, Puerto Rico and Trinidad - both sites and factories, standard and custom-built, are offered for lease which, as is evidenced by abundant experience, is a stronger incentive than sale; in Jamaica, sites are sold but factories are rented, with an option to purchase. In Brazil, improved sites are offered for perpetual lease at nominal rates. In Venezuela, sites and factories are normally for outright sale, but may also be acquired under a hire-purchase system.

In Mexico, improved sites are offered only for sale. In Peru, consideration was given, and the time the Arequipa industrial park was planned, to building general-purpose factories in advance of demand and to leasing sites and factories; subsequently, most of the demand came from comparatively large firms and it was found that there was no need for standard factories and no demand for leased land, so that improved sites are offered only for sale.

In all cases, rents or sale prices are low, often subsidized and, in one instance, that of Puerto Rico, sharply differentiated, the lowest rates applying to estates in the less developed parts of the country, as an inducement to decentralization.

In all countries where industrial estates and areas are set up, the incentive of sites and factories at low cost is combined with that of tax, customs, and other concessions. Exemptions or considerable reductions (for five to ten years as a rule, and up to twenty-five years in some exceptional cases) are given on corporate and personal income taxes, real and personal property taxes, municipal levies, and customs duties on imported machinery and materials. In the smaller countries, these advantages apply to new industries irrespective of location, but in most of the larger countries, regional and/or local tax incentives are available in addition to those applying to the country as a whole.

No common service facilities such as maintenance and repair shop, testing laboratory, forge, foundry, tool room, industrial extension centre, etc. are provided on any existing industrial estate. In a few cases, catering or health facilities are provided by the sponsoring authority on some estates or areas, but, as a rule, the provision of such facilities and amenities is the responsibility of the occupants.

The preceding discussion already gives some indications on the objectives of industrial estate and industrial area programmes in the countries under consideration. In all of them, the principal objective is to encourage and facilitate the establishment of industries and to influence and regulate their location. There are, however, considerable differences in the policies adopted and the measures adopted for their implementation.

As regards the development of industry, no industrial estate project in the region has been devised exclusively for the promotion of local entrepreneurship through the establishment of small-scale industries. The facilities of the existing estates are used in a flexible way to accommodate, either in standard or in custom-built factories, or on improved sites, industries of all types and sizes. In all cases, however, the size of the standard factories is appreciably larger than that of the buildings provided in industrial estates in other regions. In Puerto Rico and Jamaica (but not in Venezuela), the construction of custom-built factory buildings for known investors - usually foreign - is a more important activity, on the part of the sponsoring authority, than the provision of standard factories; the requirements of foreign investors are invariably for buildings larger than those which local small entrepreneurs would be able to occupy. No common service facilities, industrial extension centres, nor any other promotional facilities of this type, are provided as part of the existing industrial estate projects. As a result, while some small-scale industries have been able to establish themselves on the estates, most of the occupants are enterprises of medium or large size.

For evident reasons, the offer of improved sites on industrial areas has, in combination with other incentives, also contributed to attracting principally industries of relatively large size.

As regards location, all the countries under review are faced with problems of industrial and demographic congestion in their main cities, and with problems of economic stagnation and under-employment in large, predominantly rural areas. All countries have set forth policies aimed, at the same time, at inducing industrial decentralization and promoting regional development, in order to relieve social and other pressures in metropolitan centres, achieve a balanced distribution of productive forces, and reduce disparities in standards of living between regions at different levels of development.

Relatively few countries, however, have used the industrial estate and the industrial area principally as an instrument for the industrialization of less developed regions. Most of the existing estates and areas are located

in or near large cities or in regions where the process of industrialization has already reached a certain level of development. This is the case of the estates and areas set up in or near Kingston, San Juan, Curaçao, Port-of-Spain, the Caracas to Maracaibo region, Colón and Belo Horizonte, though a few industrial estates and areas have also been set up in smaller cities. In the case of two countries, Venezuela and Argentina, industrial areas are set up or planned in towns or regions which are to play the role of "development poles" centred on some huge industrial plants and complexes of interrelated industrial undertakings, and attracting around these a variety of manufacturing, service and commercial enterprises of all size; this is the case of Ciudad Guayana, a "New Town" under development in Venezuela, and of the planned San-Nicolás - Santa Fé industrial complex in Argentina. While these two projects would have the effect of decentralizing industry from, in one case, the industrial belt extending from Caracas to Maracaibo and, in the other, the city and province of Buenos Aires, they would result in new large-scale concentrations of population and industry.

A notable exception to this pattern is found in Mexico where, for the express purpose of diverting industry from Mexico City and Monterrey, industrial areas have been set up in Ciudad Bernardino de Sahagún, Irapuato and La Laguna, three cities located in arid and poorly-endowed regions. Despite the availability of physical facilities in the areas and of tax exemptions extending to the extraordinary period of twenty-five years, only a few industries were attracted to these towns, a fact which suggests that such incentives are effective only if the industrialists' requirements in regard to supply of raw materials, marketing of products, availability of trained labour and of communications are otherwise satisfied.

On the other hand, an industrial area has been successfully developed in Querétaro, Mexico, a predominantly agricultural centre located, however, in the country's principal region of economic expansion, at the crossroads of main railways and highways.

Another exception is Arequipa, in Peru, where favourable prospects of industrial development have been enhanced by the availability of improved sites, fiscal and financial incentives and certain services.

The role of industrial estates in dispersing industries in Puerto Rico and in the Netherlands Antilles has already been mentioned. A decentralized industrial estate has been set up in Barquisimeto, Venezuela, and industrial areas are in operation near San Fernando, the second largest town of Trinidad, and near Milford, Tobago.

In most countries, estates and areas are sponsored, financed and managed by autonomous government corporations. In some countries, the initiative was taken by state, provincial and municipal governments, and projects have been carried out in co-operation with representative private organizations. With the exception of Colombia, where the establishment of industrial estates is left to private initiative and effort, all plans now under study in other countries of the region would be sponsored and implemented by government agencies. In Brazil and Puerto Rico, a few private, profit-motivated industrial estates and areas have been developed in or near large industrial centres (Sao Paulo, San Juan), where land for industrial use is scarce, where industries are eager to settle and are willing to pay relatively high prices not only for improved land but also for buildings and services provided by the developer.

The following table contains some data on the size of industrial estates and industrial areas, and of standard factory buildings in certain countries.

Country	Industrial estates (hectares)	Industrial areas (hectares)	Standard factory buildings (square metres)
Argentina (planned)	-	163, 317, 370 500, 2500	--
Costa Rica (planned)	...	-	300, 600, 1200
Ecuador (planned)	25	16	450
Jamaica	125	-	560 to 1000
Mexico	-	200, 270, 305	-
Nicaragua (planned)	18	-	200 to 1000
Panama	-	40	-
Peru	-	52	-
Puerto Rico	19 to 178	-	560, 1100, 2100
Trinidad and Tobago	-	2, 10, 15, 18, 95	-
Venezuela	...	7, 81, 84, 131, 700	600, 800

- Not applicable

... Not available

One hectare = 2.471 acres

One square metre = 10.76 square feet.

As already noted, the sizes of standard factory buildings are in general appreciably larger 3/ than in developing countries of Africa and Asia, and of those prevailing in the United Kingdom, as may be seen in the following table:

3/ In most cases, the covered area of these buildings may be doubled.

Country	Standard factory buildings (square metres)
Nigeria	42, 56, 70, 112
Somalia (planned)	186, 418, 825, 1381
Uganda (planned)	186, 464
United Arab Republic	400
United Republic of Tanzania (planned)	74
India	37, 46, 93, 186, 418, 464 and a few from 557 to 836 a/
Ceylon	232, 464, 697 and 929
United Kingdom	139 and 465 to 4650

a/ Expandable respectively to 93, 186, 279, 557, 697 and 836 to 1114.

A number of industrial estates and areas are set up in ports and offer waterfront facilities, and a few are located near airports. In the majority of cases, estates and areas are set up in suburban locations.

The experience of the countries under review in the field of industrial estates and industrial areas includes many examples of success and a few of failure. As, in all cases, the physical facilities of the estates and areas are offered as part of an incentive programme featuring also tax and customs concessions, it is difficult to single out the respective role of each of these two factors. The cases of failure suggest, however, that neither industrial areas nor tax concessions will suffice to attract industries to localities where the primary requirements of industrialists - for materials, labour or market, as the case may be - will not be satisfactorily met. The importance of techno - economic surveys of prospects of industrial development in various localities as a prerequisite to planning an industrial estate or an industrial area, cannot be over-emphasized in this connexion.

Where favourable prospects exist, it is probable that the combination of tax incentives, physical facilities and provision of certain services will be

an effective means of inducing industrialization. The tax concessions, however, should be over and above those granted for the country as a whole, if the locality or region to be developed is at an early stage of industrialization. The same is true of the physical facilities - industrial estates with standard factories and common service facilities will be more effective than industrial areas with improved sites, at such locations. Suitable locations are not always limited to large towns. The experience under review shows that many smaller cities offer favourable prospects of development and that success may be achieved there, though more slowly than in large urban centres.

Several observers have expressed the view that the success of "Fomento" in Puerto Rico was mostly due to the tax concession and the lower rate of taxation applying after the expiration of the concessions period, and only secondarily, if at all, to the facilities in the industrial estates. Yet provision of the latter continues to be a major policy of the Puerto Rico Industrial Development Company. While the example of Puerto Rico has been paid close attention in many countries of Latin America, particularly in the Caribbean, it should be noted that its development policy, which is largely focused on attracting industry from the United States mainland, and only accessorily on the stimulation of local entrepreneurship, should be viewed in the light of the peculiar political, economic and geographic relationships of the commonwealth with the mainland. While conditions in other countries are quite different, the efforts made by many of them to attract foreign industries may be enhanced by adapting to their own needs some of the organizational, physical planning, servicing and promotional methods evolved in Puerto Rico.

There appears to be much scope, in all countries under consideration, for establishing industrial estates for small-scale industries, and for integrating such projects in comprehensive development programmes for this sector, including complementary measures of development, such as financing, industrial extension, training, and so on. The need for such an integration, which has been stressed in several United Nations documents 4/, is

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4/ See, in particular, "The role of Industrial States in Policies and Programmes for the Development of Small-scale Industries" by P.C. Alexander.

illustrated by many examples throughout the world of industrial estates remaining vacant, being slowly occupied or facing other difficulties if entrepreneurship is not stimulated, if financing is not readily available, and if technical assistance or training are not provided. The scope of these complementary measures may evidently vary with the degree of development of the country or the region, the educational level of prospective entrepreneurs and the skill of manpower, the extent of private financial resources, and other factors. Provided assistance is given at all stages of establishment, production and management, the development of small-scale industries may be one of the most effective means of mobilizing private financial resources and skills which otherwise might be diverted towards less productive activities, or might even be wasted. Industrial estates make it possible to integrate most measures of support and assistance, and offer maximum inducements to entrepreneurship and to the achievement of high levels of productivity. The growing awareness, in Latin-American countries, of the role of small-scale industries in overall and regional industrialization programmes, and of the need for government support for their promotion, will no doubt lead to the development of industrial estates as a major component of such programmes.

II. COUNTRY DATA

Argentina

In the past few years, a certain number of industrial area and industrial estate projects were under study in Argentina. The common objectives of all projects were to contribute to industrial decentralization and to promote regional development; to regulate urban expansion; and to achieve economies in public financing through a concentration of infrastructure works. The industrial estate project would have the additional purpose of stimulating the establishment of new small-scale industries and the achievement of better working conditions, higher productivity and modernization of existing enterprises by relocating these on the estate. While the planned industrial areas would contribute to diverting industries from the city and province of Buenos Aires, they would be located in one of the most industrialized parts of the country - the San Nicolás-Santa Fé region - and would not therefore contribute to the development of less developed provinces. This would also be true of the industrial estate which would be located at Córdoba, an important industrial and commercial centre.

All projects were planned in co-operation between national agencies - Consejo Nacional de Desarrollo (CONADE) and Consejo Federal de Inversiones - and local authorities - provinces and municipalities.

A project to create an industrial complex consisting of existing large plants and new industries set up on four industrial areas in the San Nicolás-Santa Fé region was studied in 1963 by the Consejo Federal de Inversiones. The four areas would be located, respectively, in Villa Gobernador Gálvez, on a 317 hectare site (783 acres), Villa Constitución, on 500 hectares (1,235 acres), San Lorenzo on 370 hectares (914 acres), and Santo Tome on 163 hectares (393 acres).

The project was based on the "development pole" theory. The complex would extend over a broad geographical region including several large cities where some major industries are already located. A network of complementary industries would be set up in or near smaller towns. At the same time, a rational urban planning programme for the cities involved would be worked out.

Thus, the Villa Gobernador Gálvez industrial area would accommodate expanding industries which, for lack of room and physical facilities, have either to leave the city of Rosario or are unable to settle there. The industrial area of Villa Constitución would be occupied by industries related to the steel and metallurgical concerns being developed from San Nicolás to Arroyo Seco. At San Lorenzo, the industries would be related to the petrochemical, chemical and metallurgical complex extending from Rosario to Puerto San Martín. The industries in these three areas would be largely complementary to the large existing plants, as well as to each other. At Santo Tomé, industries would be complementary to the metallurgical centre of Santa Fé - Sauce Viejo, while others would process local agricultural and animal resources.

In addition, an industrial area would be set up on 2,500 hectares (6,175 acres) of land at San Nicolás, near a large steel mill and other metallurgical plants.

The industrial estate was being studied as a pilot project for the city of Córdoba, where a large number of small-scale industries are established and good prospects exist for the creation of new small enterprises. A development programme was being worked out by the municipality and provincial authorities and a long-term loan from the national government was being negotiated to finance construction of the industrial estate.

Consideration was also being given to setting up industrial areas at Mendoza, Río Negro (Viedma), Chubut (Comodoro Rivadavia) and Tucumán.

At the request of the Government, a United Nations expert reviewed, in 1964, the industrial area programmes. He recommended that, if a decentralization policy aimed at developing relatively less developed areas were to be carried out, it would be necessary, on the one hand, to place restrictions on the establishment of industries in already industrialized centres, along the lines of those adopted in the United Kingdom; and, on the other hand, to complement an industrial area programme - which, in his opinion, would not be sufficient to induce industry to move to relatively less developed regions and to stimulate local entrepreneurship - by a

a range of special incentives such as tax and tariff concessions, long-term financing, reduced rates of utilities, and other promotional measures; the inducements might be differentiated according to the level of development of the regions towards which industry would be steered. The expert also recommended that, in addition to industrial areas for large and medium-sized industries, industrial estates for small-scale industries be set up, in order to diversify industrial production and open up opportunities for investment by local entrepreneurs. He also advised on priorities in developing the industrial areas included in the existing programme, admission policies, rent and sales policies, management and methods of financing.

Brazil

Two "industrial cities" are established in the vicinity of Belo Horizonte, capital of the State of Minas Gerais. These cities - Contagem, founded in 1941 and Santa Luzia, founded in the nineteen fifties - have been set up with a view to attracting industry to a region with an economy mainly based on mining and agriculture. Other objectives were to provide employment and stop migration towards the industrial centres - Rio de Janeiro and São Paulo - and to decongest the urban area of Belo Horizonte.

Both projects were financed by the state and are under state management. In the industrial areas improved sites are offered to industrialists for perpetual lease at nominal rates. Water is supplied free of charge and ample electric power is available. Both areas are zoned for heavy and light industries. In Contagem, some heavy industries have been promoted in the form of joint ventures between state and private groups; they include steel mills, the manufacture and assembly of motor cars, tractors, railway cars and machinery, the manufacture of oil products, cement and other building materials. Light industries include dairy and food-processing plants making use of the state's livestock resources, pharmaceutical products, electrical appliances, paper products and others. Common services include catering, health facilities and a vocational school.

Santa Luzia was set up after it had become apparent that Contagem was about to be fully occupied while demand for industrial sites continued to be strong. A few years ago, plans were made for the establishment of industrial areas in two other cities in the State of Minas Gerais - Governador Valadares and Uberlandia - and in the State of Bahia.

A privately owned industrial estate has been in operation since 1952 in the Lapa suburb of São Paulo. Its management sells improved sites and builds factories for sale or lease with option to purchase.

Within the framework of the development of the north-east of Brazil, sponsored by SUDENE (Superintendencia do Desenvolvimento de Nordeste), projects for the establishment of industrial estates, to be sponsored by the governments of the north-eastern states, are currently under study. At the request of the Government of Brazil, the United Nations will provide in 1967, under its Development Programme, the services of an industrial estate expert to assist SUDENE in carrying out this programme.

Chile

The development of small-scale and medium-sized industries in Chile is the responsibility of the Servicio de Cooperación Técnica (SCT), (Office of Technical Co-operation), an autonomous corporation set up by the Corporación de Fomento (CORFO) (Development Corporation). The Governing Council of SCT is composed of representatives of CORFO, the Ministry of Labour and Commerce, universities and representatives of industry. SCT is organized into three operational departments responsible, respectively, for technical assistance, professional training, and small-scale industries.

The department of small-scale industries of SCT has a comprehensive development programme including technical assistance, feasibility studies, promotion of co-operatives and associations of small producers, which is expected to be strengthened and expanded in the period 1967-1971 with assistance from the United Nations Development Programme (Special Fund). The establishment of industrial estates will be part of this programme. Preliminary studies have been undertaken for the establishment of an industrial estate in the commune of Maipú, near Santiago, and in Osorno. The Government of Chile has requested UNDP to provide, in 1967, the services of an industrial estate expert under the technical assistance component of the programme.

Colombia

In Colombia, the initiative in setting up industrial areas and industrial estates has been taken by private associations of small-scale and medium-sized industries.

In Cali, Department of Valle, the Asociación Colombiana Popular de Industrias (ACOPI) (Colombian Popular Association of Industries) and the Federación de Pequeñas Industrias Colombianas (FEPICOL) (Federation of Colombian Small-scale Industries) have acquired land for an industrial area. Individual plots are sold to industrialists who would put up their own buildings. About 125 entrepreneurs have already paid part of the purchase price of their lots. The project would be managed by a co-operative association of occupants. The co-operative would arrange for the supply of power, water and drainage and might serve as an agent for bulk purchases of raw materials and bulk sales of manufactured goods; it might also assist in the purchase of machinery and provide services in accounting, law and architectural design. The project appears to be confronted by some financial and organizational difficulties.

In Sogamoso, department of Boyacá, a private enterprise and a group of local businessmen are planning the purchase of 50 hectares (124 acres) of land to be developed as an industrial area. A similar scheme at Manizales, department of Caldas, is being considered by a private financing corporation. These projects also appear to be hampered by financial and other difficulties.

Further to consultations held in 1964 by a Technical Adviser of the United Nations Centre for Industrial Development with government and other authorities, the services of an industrial estate expert were provided, towards the end of 1965, by the United Nations to the Instituto de Investigaciones Tecnológicas (IIT) (Institute for Technological Research), a Special Fund-assisted centre which has evolved a programme of assistance to small-scale industries. In view of the difficulties faced by private groups in setting up industrial estates and areas, in particular in attempting to organize them as profit-motivated ventures, the expert has recommended that the Government take a more active part in the promotion of small-scale industries and the establishment of industrial estates, in particular as regards financing of construction.

Costa Rica

In the past few years, a certain number of proposals for the establishment of industrial estates and industrial areas in various locations in Costa Rica have been made by various authorities and agencies. Feasibility studies have been carried out by the Instituto Nacional de Vivienda y Urbanismo (INVU) (National Institute for Housing and Urbanization) and by private consultant organizations for, respectively, the Banco Centroamericano de Integración Economica (Central American Bank for Economic Integration), and the Presidency of the Republic. A municipality, a railroad institute and a private real estate corporation have submitted plans or proposals in this field. The sites proposed by these various agencies are in or near San Jose, Puntarenas, Heredia, Cartago, Liberia, Limon-Moin, and Alajuela.

The purposes of the projects studied by or for Government agencies are to stimulate industrialization, both by national entrepreneurs and foreign investors, to ensure better land use in towns, and to achieve a measure of industrial decentralization. The recent eruption of the Irazú volcano, which covered a wide area with ashes and disrupted economic activity, gave further impetus to the idea of planned location of industries at a distance from the volcano and the capital.

At the Government's request, the United Nations provided, in 1965, under its Development Programme, the services of an expert who reviewed the various area and estate projects and formulated recommendations for a programme of immediate action. He recommended to begin by setting up one industrial estate for small-scale industries, with standard factory buildings erected in advance of demand (with an area of, respectively, 1,200, 600 and 300 square metres), custom-built factories, improved sites, administrative building, common maintenance and repair shop, training centre (to be provided by the Instituto Nacional de Aprendizaje (National Apprenticeship Institute), machine lease shop, and a testing laboratory. The expert made recommendations on the location, size of the estate, schedule of development, admission policies, incentives to prospective occupants, and estimated the costs of the project.

Ecuador

At the request of the Government of Ecuador, a team of two officials of the Centre for Industrial Development of the United Nations visited the country in 1964 and made recommendations for a policy and programme of development of small-scale industries, including the establishment of industrial estates. With further assistance from the United Nations Development Programme (UNDP) and the Centre for Industrial Development, the Government formulated, in 1965, a project for the establishment at Cuenca, capital of the Province of Azuay, of a demonstration industrial estate for small-scale industries and an industrial area for industries of all sizes, and submitted a request for assistance to the UNDP (Special Fund).

The selection of Cuenca was made after consideration of alternative locations, including Quito and Guayaquil. It was considered that the project should contribute to the decentralization of industry - which is so far concentrated in the latter two cities - by promoting its establishment and growth in a relatively less developed region with good prospects of industrial development.

Cuenca (population 80,000) is the economic centre of the Provinces of Azuay, Cañar and Morona Santiago. The region has abundant raw materials, including mineral, agricultural and forestry resources. In order to stimulate the economic development of the three Provinces, the Central Government created, in 1958, the Centro de Reconversión económica del Azuay, Cañar y Morona Santiago (CREA) (Centre for Economic Rehabilitation), and promulgated special tax incentive laws for new industries settling in the region. With the help of the Central Government, CREA undertook programmes for the construction of roads, water, sewers and expansion of electric power, and stimulated the establishment, in the past five years, of some fifty industries, including a cement plant, a tyre factory and a variety of metal-working, wood-working and other industries. Feasibility studies carried out by CREA and the Centro de Desarrollo (CENDES) (Development Centre) have revealed good prospects for some forty new industries, most of which are suitable for small-scale operation.

The industrial estate and industrial area would be developed on a site, 41 hectares in area (101 acres), already purchased by CREA. In the five-year period of the project, the programme provides for the development of 10 hectares (25 acres) of land for the industrial estate and the construction of 30 standard factories of 450 square metres each (4,835 square feet). In the same period, 6 hectares (15 acres) would be developed in the industrial area.

The common service facilities on the estate would include an administrative and technical building, an industrial extension centre, a maintenance and repair shop, a testing laboratory, common procurement services for raw materials, and marketing facilities for finished goods. A canteen, fire station, dispensary and first-aid station would also be provided. Banking facilities would be set up by credit institutions.

The industrial estate and area would be owned by a private corporation, the members of which would be CREA, CENDES (representing the Central Government) and the Chamber of Industries of Cuenca. The corporation would be responsible for the construction, organization and administration of the estate and area, including common service facilities. The project would be financed for the most part by the Government through CENDES. The factory buildings would be sold or rented to the prospective entrepreneurs.

Eventually, industrial estates would be set up in other locations.

The industrial estate programme of the Government of Ecuador is fully integrated in the country's programme of promotion of small-scale industries, which includes incentive legislation (industrial development law of December 1964; law for the development of artisans and small-scale industries of January 1965); the law of the National Development Bank of December 1964 which sets up a fund amounting to 20 per cent of the Bank's authorized capital for loans to small industries; the law for the National Security Commission - National Financial Corporation, of August 1964, establishing a special development and guarantee fund for small-scale industries; and technical and managerial assistance for the establishment, expansion and industrialization of small industries, feasibility and pre-investment studies, supervised credit schemes, etc., provided by CENDES.

Jamaica

In Jamaica, the availability of factories and sites on an industrial estate, and assistance for the establishment of factories on individual sites are part of a general programme of industrialization carried out by the Jamaica Industrial Development Corporation (JIDC), a statutory body set up by the Government in 1952. Incentive legislation provides for tax concessions and other benefits to prospective investors. One of the laws - the Industrial Incentives Law of 1956 - is currently being amended to extend the tax-free period from the present seven years to a maximum of fifteen years, depending on the location of the plant. The maximum may be obtained by industries set up in locations designated by the Government as "depressed areas".

The industrial estate, established in 1952, is located about two miles from Kingston, on government land sold to JIDC at the nominal cost of £1 per acre. Its size is of about 310 acres (125 hectares) of which, by the middle of 1964, over 50 per cent had been developed for the use of 44 industrial enterprises and 19 service firms.

The estate offers improved sites for sale and factories built by JIDC for lease or rent. The Corporation also assists entrepreneurs by building factories for lease with an option to purchase at any time during the lease. Rental is usually at the rate of approximately 10 per cent of cost of land and building, the lessee bearing costs such as taxes, insurance and water rates. JIDC is the sole agency responsible for construction of factories on the estate. In many instances, however, construction is given out on contract to private building firms. Some sites are available in close proximity to the railroad, and are linked by spurs to the main tracks.

There are no restrictions regarding the type of industries which can be established on the estate, except "obnoxious" ones. As a broad policy, admission of industries with a high labour content is preferred. By the middle of 1964, the 44 industrial tenants included metal product plants, cosmetic, pharmaceutical, paint, apparel, footwear, glass container, foodstuff and other industries. The 19 service industries included gas stations, a cold storage plant, hardware and printing shops, warehouses,

a laboratory, transport companies, etc. Total employment was in excess of 3,000 persons.

The size of plots occupied by manufacturing industries varies from 22,000 to 435,000 square feet (2,150 to 41,400 square metres), many in the 30,000 to 100,000 square feet range, twelve being of over 100,000 square feet. Factory areas range from 6,000 to 65,000 square feet (557 to 6,038 square metres), many of them in the 10,000 to 20,000 square feet range. Employment varies from 6 to 576 persons per enterprise; twenty-two companies employ less than 50 workers; average employment per enterprise is 80.

Since 1962, ten acres of land (4 hectares) have been earmarked for an industrial area by the Parish Council - a local government authority - of St. James, in the north of Jamaica. The project, called Rogue Industrial Estate, offers improved sites for lease to industrialists. An "industrial park" is planned as part of a $30 million project at Montego Bay, including harbour, hotel, residential and transport facilities, to be developed over ten years, beginning in 1966.

In its reply to the United Nations questionnaire on industrial estates, the Jamaican Government stated that it was unlikely that it would develop other industrial estates in other locations. Its policy, which is to promote the development of industries in all sections of the island, especially in rural areas, will be carried out by purchasing land on an ad hoc basis in areas where entrepreneurs agree to set up their factories. As mentioned earlier, differential incentives are being devised for that purpose.

The Government also stated that "experience has taught us that the provision of basic requirements, such as improved land sites and general services (power, water, etc.) does not guarantee that factories will be located in such areas. Reasons given by prospective investors for not locating in such areas are:

"(1) Distance from source of raw materials and principal market.

"(2) Problem of maintenance. It is claimed that rural areas do not provide adequate repair facilities.

"(3) The shortage of skilled and technical personnel in such areas.

"(4) The lack of adequate housing and social facilities for plant employees.

"It is believed that the planned amendments to existing incentive laws whereby tax holiday periods will be extended in the case where the manufacturer locates in a 'depressed' area will offset these difficulties and provide the inducement for rural industrialization.

"On the positive side, our experience suggests that the following are pertinent considerations in the establishment of industrial estates:

"(a) Industrialists appear to prefer freehold occupancy rather than leasehold occupancy.

"(b) The estate should be laid out in such a manner as to permit great flexibility in sizes of sites in order to meet the varying demands of industry.

"(c) Adequate supplies of water and power are of vital importance."

Mexico

For the past fifteen years, the provision of improved sites in industrial areas has been one of the instruments used by certain Mexican Government agencies to influence industrial location by checking further concentration of industry in the Federal District of Mexico and, at the same time, promoting industrialization in less developed regions, in particular in rural areas.

The experiment began in Ciudad Sahagún (Town of Irolo, State of Hidalgo) located in an arid and poorly endowed rural area where three large industrial establishments were set up between 1951 and 1956 in an effort to develop the region's economy: Diesel Nacional, S.A., originally planned for the assembly of heavy lorries and now manufacturing compact cars; Constructora Nacional de Carros de Ferrocarril, which produces railway equipment; and Siderúrgica Nacional, S.A. (formerly Toyoda de México), which produces castings and machined parts. All three were set up as private enterprises but, eventually, the local branches of Nacional Financiera subscribed and paid up their capital and guaranteed their loans. Today, Nacional Financiera lays down the economic policy of this group of industries, whose operations are complementary, and manages the complex.

After the three plants were built, industrial sites with power, water, drainage and internal roads linked with main highways were developed in order to attract other industries. Despite federal and state tax concessions granted for 15 to 25 years, and other inducements, no other industries have thus far been established at Ciudad Sahagún. Yet the three large factories have contributed to transforming a number of under-employed rural labour into industrial workers with various skills and to raising living standards in a particularly poor region.

Two other industrial area projects were sponsored by the Comisión Federal de Electricidad (Federal Electricity Commission) at, respectively, La Laguna (Town of Gómez Palacio, State of Durango) and Irapuato (State of Guanajuato), with the same objectives. Both towns are located in rural areas. The size of La Laguna area is 305 hectares (740 acres), of which 130 are developed and available for sale; undeveloped sites are offered for sale on 116 hectares.

The Irapuato area occupies 270 hectares (667 acres) with developed sites for sale on 111 hectares and undeveloped sites for sale on 116 hectares.

Despite relatively favourable purchase and occupancy terms for sites (30 pesos per square metre for developed sites and 5 pesos per square metre for undereloped sites at La Laguna - 25 and 5 pesos respectively at Irapuato (U.S. dollars 2.50, 0.40, 2.00 and 0.40) and tax incentives similar to those applying in Sahagún, only a few industries have been set up in both areas.

While the inducements of industrial sites and tax concessions have been ineffective in these poorly endowed and relatively remote rural areas, they have been quite successful at Querétaro, a state capital located 115 miles north-west of Mexico City, in the middle of the country's main region which accounts for 43 per cent of Mexico's population, 62 per cent of its industry and 69 per cent of its total industrial production. Querétaro is an important communications centre, being at the crossroads of major highways and railroads.

Despite this potentially favourable location, the town remained until 1961 a small (60,000 inhabitants), predominantly agricultural centre in a semi-arid region. In that year, the Governor of the state invited a United States business consultant firm to make a study of the city's industrial possibilities. At the same time, a Committee on Economic Development was set up, in which state government, business and labour were represented. It was decided to develop an industrial area and to provide various incentives to attract industry.

The state set aside an industrial and residential zone so located that prevailing winds blow smoke and fumes away from the city. The zone is developed by a private enterprise, Inmuebles de Querétaro S.A. Its total size is 580 hectares (1,430 acres), of which 200 hectares are developed as an industrial area, 19 as a commercial area and 79 as a residential area (500, 50 and 175 acres, respectively). In the industrial area, the lot sizes currently range from 5,000 to 300,000 square metres (one and a quarter to 74 acres). The lots are provided with power, water, natural gas and drainage, and many of them with railway sidings, the railroad running directly through the area.

The prices of lots vary depending on size and services required. In an effort to avoid excessive price speculation on the still available industrial land, Inmeubles de Querétaro has established a system of land price discounts up to 50 per cent, depending on the date of actual new plant construction and completion. Median land prices are 26 pesos per square metre of improved land with services (about US $2.00).

In addition to the federal tax concessions for the promotion of industry, exemptions of up to ten years of state taxes are offered to the occupants. The state has set up an office in Mexico City to promote occupancy and to help entrepreneurs in fulfilling formalities.

The result of these measures is that industry has come to Querétaro. Since 1962, total investment in new plants has been about US $40 million. United States and other foreign companies have figured prominently in this development, often in conjunction with Mexican capital. Industries include a large plant making automobile and truck transmissions, a sewing machine factory, tractor factories, tool factories, food and other industries. Three technical training centres are operating. The population of Querétaro rose from 65,000 in 1962 to 100,000 in 1966 and industrial employment from 4,000 to 8,000.

Netherlands Antilles

In order to broaden the economic base of the islands and, in particular, to encourage the establishment of industrial enterprises, the Government of the Netherlands Antilles is providing tax and tariff concessions and physical facilities for industries. The National Ordinance for the Promotion of Industrial Establishments and Hotel Construction, 1953, provides tax and import duty exemptions for a minimum period of ten years (maximum eleven years) to enterprises with an investment of 100,000 NA guilders ($53,000) in Aruba and Curaçao (50,000 NA guilders in the other islands), or create additional employment for at least 10 Antillan labourers (5 on the other islands), and set up an industry or branch of industry which did not exist in the Antilles on 1 January 1948.

Physical facilities and additional tax and import and export duty concessions are offered to industries, especially export industries, which set up factories in the "free zones" of Aruba, Bonaire and Curaçao. Within each zone, space is reserved for light and heavy industries and warehouses and infrastructure facilities - power, water, drainage, etc. - are provided. Factories and warehouses may be built by the Government for known occupants, and are leased on rent. Thus, the industrial zoning scheme is not merely a regulatory device to control the location of industry. The free zones are, in effect, industrial areas with some of the facilities offered elsewhere on industrial estates, in particular, the provision of factories on rent.

A feasibility study for the establishment of an industrial estate for small-scale industries has recently been carried out.

Nicaragua

In 1961, a detailed feasibility study and plan for an industrial estate to be located in the Managua area were prepared by the Oficina Nacional de Urbanismo, Ministerio de Fomento y Obras Publicas (National Urban Planning Office, Ministry of Development and Public Works) with the assistance of an expert provided by the United States Agency for International Development.

The project was to be part of an overall programme of industrial development, including tax incentives, establishment of an Industrial Productivity Centre, financial assistance from the Instituto de Fomento Nacional (INFONAC) (National Development Institute), technical assistance, training and other measures.

The project called for the improvement of sites and the building of factories for sale to entrepreneurs setting up light manufacturing enterprises. It was estimated that twenty to forty industries could be set up over a ten-year period; total employment of forty plants would be of about 1,500 persons.

The total land requirement would be of 9.5 hectares (22 acres) for the minimum of twenty plants, and of 18.5 hectares (46 acres) for forty plants. For a 1,000 square metre factory (10,765 square feet) covering initially 30 per cent of a plot, and extendable eventually to 50 per cent, the average lot size was estimated at 3,000 square metres (32,300 square feet). The industrial plots would cover about 65 per cent of the total area; common facilities, including administrative building, common workshops, gas station, cafeteria, dispensary and post office, 10 per cent; streets and parking space, 15 per cent; and landscaping, 10 per cent.

Factory units, 200 to 400 square metres (2,153 to 4,306 square feet) each in area, would be offered for rent to the smaller industries. The units would be partitioned in a common building. Technical assistance would be provided as part of the project.

The industrial estate would be administered by a non-profit autonomous corporation.

Panama

In an effort to alleviate unemployment and promote industrial development, the Government of Panama established in 1953 a "free trade zone" at Colón, at the Atlantic entrance of the Panama Canal. The zone is administered by an autonomous body created by the Government. It occupies 99 acres (40 hectares) and is sub-divided in industrial, warehouse and distribution areas.

The location and facilities of the zone and tax incentives have attracted a number of industries, in particular United States companies, whose products are channelled not only to central and south America but to Europe and Asia as well. In 1964, the zone provided direct employment to 1,500 persons and indirect employment to 3,500.

Peru

In Arequipa (population about 200,000), capital of southern Peru, construction of an "industrial park" (area) of 52 hectares (about 128 acres), is nearing completion. The park is sponsored by the Junta de Rehabilitacion y Desarrollo de Arequipa, a semi-autonomous, government-financed development corporation responsible for all aspects of development in the department of Arequipa. One of the functions of the Junta is industrial development through promotion of large-scale, medium-sized and small-scale industries, and handicrafts.

Of the 52 hectares of the industrial park, 42 hectares (about 105 acres) are earmarked for industrial plots, the remaining area being used for roads, service areas and a vocational school. Originally the park had been conceived as an instrument for relocating existing local industries, by providing them more favourable conditions for growth and expansion. Consideration had also been given to building general-purpose factories ahead of demand. However, subsequently most of the demand has come from comparatively large new firms, both Peruvian and foreign, and it was found that there was no need for standard factories. It was also found that there was no demand for leased land, and improved sites are offered only for sale. The average lot size amounts to 7,000 to 8,000 square metres (about 75,000 to 86,000 square feet) and out of 18 new industries being located in the industrial park, only 6 require lots of less than 2,000 square metres (about 21,500 square feet). It is expected that the industries established in the park will provide direct employment to about 1500 persons. Total investment will amount to about US $1.3 million.

The park offers improved sites with water, sewage, electricity, telephone service, streets and street lighting, railroad access and landscaping. In addition, a police station, gas station, restaurant and a vocational school will be located in the park area.

The admission and occupancy policies follow closely those of the Puerto Rico Industrial Development Company (PRIDCO). Obnoxious industries are restricted from entering the park. New industries receive generous tax concessions, the reductions amounting to about 80 per cent, an incentive

which influences somewhat the industrial composition of the park. Preference of admission is given to those industries that will add most to the employment of the region, create investment opportunities for other industrial enterprises, process raw materials of the region or provide exceptional training facilities for workers, technicians or managers. Lower priority is given to existing enterprises seeking to relocate in the park.

Land is sold at the equivalent of US $3.75 per square metre. Fifteen per cent of the price has to be paid when signing the contract; for the remaining 85 per cent, terms of up to ten years can be granted by the Junta.

In a communication received from the Junta, it is stated that: "The Arequipa Industrial Park has proven to be a most successful venture. Practically all the available land has already been sold or committed even though the construction of thepark is only about to be completed. It is the first industrial park in Peru, and other Peruvian cities such as Cuzco, Tacna, Huancayo, Trujillo andChiclayo are also starting to make studies for industrial parks in their areas. It is becoming apparent that industrial parks combined with tax incentives and efforts to study and promote the industrial investment opportunities of a region represent effective tools for attracting industries to locations outside of Lima and thus to contribute to a decentralization of Peru's future industrial structure."

Puerto Rico

The provision of improved sites, factories for rent and a variety of services is part of a comprehensive programme of development carried out in Puerto Rico since 1950. The development programme ("Fomento") is directed and supervised by a government agency, the Economic Development Administration (EDA), through a number of operational units, the most important of which, in the field under consideration, is the Puerto Rico Industrial Development Company (PRIDCO), a public corporation engaged in real estate, construction and financing.

The overall industrial development programme combines tax exemptions for periods of five to ten years (and low rates of taxation after expiration of the exemption period, the corporate and personal federal income taxes being inapplicable in the commonwealth), with locational incentives and various services and measures of assistance. The programme is largely geared towards attracting capital and entrepreneurship from the United States mainland. However, no assistance is given to firms which propose to close down a plant in the United States and to relocate in Puerto Rico. Thus, United States industries benefiting from the "Fomento" programme must be new or expanding companies. In recent years, increasing encouragement has been given to the establishment of Puerto Rican enterprises and joint ventures through special incentive and lending policies.

In 1966, there were thirteen industrial estates (called "industrial subdivisions") established between 1953 and 1967 in various localities: six in or near San Juan, three near Mayaguez, two near Ponce, one at Caguas and one near Arecibo. On the basis of their location, the estates may thus be classified as metropolitan, urban and attached to ports; PRIDCO is planning to establish several estates near the principal airports.

In each estate, PRIDCO offers a choice of improved sites, standard factories built in advance of demand, multi-factory buildings and special factory buildings, according to the needs and specifications of each industrial establishment.

PRIDCO does not sell, but only leases industrial land and/or buildings. The lease is for a fixed period of ten years at an annual rent, to be paid in advance in monthly instalments. In addition, the tenant has to pay real estate tax, and charges for water, sewer, gas, electricity and other services. The tenant has also to take out risk insurance protecting the landlord against fire, hurricanes, earthquakes, boiler (if any) and general accidents. The lease is renewable for fixed terms of ten years. In order to disperse industry and thereby promote a regionally balanced development, differential rental rates apply in five geographical zones. The lower rates, which are subsidized, apply to the less developed areas of the island.

The construction of industrial estates is carried out by private contractors under the supervision of PRIDCO. The Company does not exercise any control over the management of individual tenant companies.

Zoning regulations set forth restrictions on admission and occupancy of industries in the estates. The buildings must be used exclusively for manufacturing, assembling or processing purposes. The estates are classified as "heavy", "light" or "heavy and light". Special commercial uses may be allowed in certain designated lots.

The land coverage of any building should not exceed 50 per cent of the lot area, so that proper ventilation, space for parking and circulation can be provided. The minimum sizes of yards are: front yard, 6 metres (about 20 feet); side yards, 3 metres (about 10 feet); rear yard, 10 per cent of lot's depth. The height of each building should be limited to two stories so that the floor area of the building will not exceed an area equal to that of the lot; however, in cases where it is necessary to exceed the height of two stories, the lot coverage should be reduced so that the total floor space of building does not exceed the area of the lot. The floor area should not be less than 10,000 square feet (929 square metres), except in such cases where the lot size is considerably larger than one acre (approximately 4,000 square metres); in the latter case, the minimum size of the building may be increased up to a size to be determined by the Company. In any case, expansion up to 20,000 square feet (1,858 square metres) should be provided for. There are three types of standard one-storey factories,

respectively 6,000, 11,500 and 23,000 square feet (557, 1,068 and 2,137 square metres) in area.

PRIDCO constructs its industrial estates out of its own funds obtained from government appropriations and from the sale of general revenue bonds. PRIDCO and the Puerto Rico Development Bank may finance the acquisition of industrial facilities by private firms.

Power is supplied by the Puerto Rico Water Resources Authority, water and sewerage by the Puerto Rico Aqueduct and Sewer Authority, fire protection by the Commonwealth Government. PRIDCO provides assistance, such as engineering and economic research and help in recruiting and training labour. Services such as canteen, medical care, watch and ward, sprinkler system, etc. are arranged by the occupant firms.

Some data on industrial estates and occupancy as of the middle of 1964 are shown in the following table:

Location and name of estate	Date of opening for occupancy	Total acreage a/	Acres occupied	Average lot size (acres)	Type of occupancy permitted b/	Estimated employment	Estimated capital investment (millions of dollars)
San Juan							
Cataño Guaynabo Waterfront	1958	19	15	2.0	H	258	2.0 c/
Mato Rey	1958	136	98	1.4	L and H	2,400	6.0 d/
Lucchetti	1953	93	46	3.0	H	1,520	2.5
Minillas	1953	178	63	1.8	L and H	1,920	5.0
Sábana Abajo	1960	31	18	1.0	L	-	0.75
San Juan Bay Waterfront	under constr.	100	-	-	H	-	1.8
Mayaguez							
Free Trade Zone	1960	33	8	1.2	L and H	400	0.5
Guanajibo	1960	39	15	1.6	L and H	640	0.75
Mayaguez Waterfront	1960	64	24	2.4	H	1,450	4.0 e/
Ponce							
Ponce Waterfront	under constr.	105	-	-	H	-	1.5
Ponce West	1961	69	10	1.7	L and H	480	1.0
Caguas							
Caguas North	1955	44	38	2.0	L and H	1,360	2.5
Arecibo							
Zeno Gandía	1957	46	18	1.6	L	640	1.0
Total:	-	957	353	1.8	-	11,068	29.3

a/ one acre = 0.40468 hectare.
b/ H = heavy industry; L = light industry
c/ plus $4.0 million private.
d/ plus $3.0 million private.
e/ plus $5.0 million private.

Between 1950 and 1965, the number of industrial plants set up in Puerto Rico in the industrial estates and outside rose from 82 to 1,126 and total employment in industry from 6,265 to 78,000.

Beginning in 1958, after the first PRIDCO industrial estates were established, private investors have developed several estates near the metropolitan area of San Juan, where there is considerable demand for industrial land. These are operated as profit-motivated commercial ventures.

Several observers have expressed the view that tax exemption and subsequent low taxation have been the most important single factor influencing the establishment of industries in Puerto Rico. 5/ Some of them acknowledge, however, that the inducement value of tax exemption, on the one hand, and low taxation, on the other, varies from one type of industry to another, and that other factors have also influenced decisions to locate in Puerto Rico. On balance, the effectiveness of the Puerto Rican programme may be attributed to a well-balanced and skilfully publicized set of measures combining tax and other inducements with assistance in all phases of planning, construction and operation of industry. 6/

5/ See, for example, Fomento - the Economic Development of Puerto Rico by William H. Stead, National Planning Association, Planning Pamphlet No. 103, Washington, D.C., March 1958; and Puerto Rico's Industrial Development Program, 1942-1960 by H. C. Barton, Jr., Center for International Affairs, Harvard University, October 1959.

6/ United Nations, Establishment of Industrial Estates in Under-developed countries, page 26 (Sales No. 60.II.B.4)

Trinidad and Tobago

In Trinidad and Tobago, the establishment of industrial areas and industrial estates is part of a comprehensive system of measures aimed at promoting industrial development. The other principal measures include tax exemption on profits of newly-established "pioneer" industries during the early years, reduction in costs of production of both old and new industries through remission of import duties on plant, machinery and raw materials, and accelerated depreciation allowances. The programme, including construction and management of industrial areas and estates, is implemented by the Industrial Development Corporation (IDC), a governmental agency.

The objectives in providing physical facilities to prospective industries are: attracting industries from abroad; promoting the development of large-scale, medium-sized and small-scale industries; influencing industrial location with a view to decentralization; developing rural areas and regions with a concentration of under-employed labour; and facilitating expansion and resettlement of existing industries.

Five industrial areas are being developed in various parts of the country by IDC on lands granted by the Government, in urban and suburban locations. The establishment of estates or areas in rural regions is being planned.

The areas offer fully developed sites with water, electricity, railway sidings, roads, sewerage, fire protection, telephone and postal services, and when completed will offer banking facilities, canteens and recreational centres. Central maintenance and repair shops are planned for the larger areas. Sales depots are provided by the tenants; on the larger areas, IDC has allocated sites to persons providing warehousing facilities to the tenants.

The following table shows the location, size and progress of development of the five industrial areas as of the middle of 1964:

Area	Size (acres) a/	Area occupied (acres) a/	No. of factories	Average factory size (sq. feet) b/	Average plot size (acres) a/	Employment	Capital investment (US dollars)
East Dry River	36	3.9	3	17,888	1.3	118	960,224
Sea Lots	25.5	0.7	1	9,840	0.7	12	760,071
O'Meara	234	27.0	9	12,704	3.0	464	1,548,790
Laisance	45	1.0	1	-	1.0	38	299,736
Milford, Tobago	5.2	-	--	-	-	-	47,649

a/ One acre = 0.40468 hectare
b/ One square foot = 0.0929 square metre

Parts of certain areas will be developed as industrial estates offering factory space and factory units for rent to small-scale and medium-sized industries. As an experiment, one standard factory will be built, in advance of demand, on one of the larger industrial areas.

The industrial areas now developed are non-specialized; they are intended primarily for manufacturing and assembly industries, excepting those prohibited by law or which present obnoxious features which cannot be satisfactorily controlled. The available supply of power and water may restrict accommodation of industries which are large consumers of these utilities, though special arrangements may sometimes be made.

Although the development plan of an area provides for division into factory sites of varying dimension, no special restriction is placed on enterprises according to their size; if necessary, IDC is prepared to join several sites to accommodate an enterprise.

While IDC prefers to encourage newly-created enterprises on the industrial areas, there are no restrictions to existing enterprises wishing to relocate on the areas because of need to expand or inadequacy of existing accommodation. The areas are managed by the Industrial States Unit of IDC, which is responsible for development of the areas, control of the types of buildings erected thereon, including provision of welfare facilities for employees. Occupants have no voice in management of the areas.

For the time being, the Corporation only leases the plots on the estate; the term of lease is for thirty years with an option for renewal for another thirty years. Rent is at 4 per cent of the market value of the land and a premium of 20 per cent of the market value of the land is required on the granting of the lease. However, in special cases the premium is waived and rent is charged on a graduated scale. The factories are built by the occupants through private contractors; construction must comply with a code drawn up by IDC.

A United Nations expert is currently assisting IDC in formulating a comprehensive programme for small-scale industries, including provision of industrial estates, common service facilities, industrial extension and information services.

Venezuela

In Venezuela, industrial estates and industrial areas are set up by national, regional and local authorities, often in co-operation with each other.

Two national financing and development agencies have been active in this field. The Comisión Nacional de Financiamiento Industrial (National Commission for Industrial Financing) has, through one of its regional commissions, set up an industrial estate at Valencia. The National Commission is a financial institution established in 1959 to provide credit to small-scale and medium-sized industries defined, respectively, as industrial enterprises with a capital investment of less than 100,000 bolivars, and between 100,000 and 1 million bolivars (US $22,220 and $22,220 - $222,200). The credit policy of the Commission is largely oriented towards inducing entrepreneurs to move to the industrial estate, the granting of loans being usually linked to the purchase of an estate factory.

When completed, the Valencia industrial estate will have 122 standard factory buildings. Those already constructed are of two sizes: 600 square metres, on 1250 square metre plots (6,458 and 13,500 square feet), and 800 square metres on 1650 square metre plots (8,610 and 17,800 square feet). The smaller factories may be purchased on ten-year terms for 60,000 bolivars at monthly payments of 777 bolivars ($13,300 and $173) and the larger ones for 85,000 bolivars and monthly payments of 944 bolivars ($19,000 and $210). In 1965, 30 standard factories were occupied.

Credit is also made available by the Commission for procurement of new materials and working capital. The agency plans to develop a technical assistance programme linked to its financial and industrial estate oporations.

The Corporación Venezolana de Fomento (CVF), with the co-operation of the National Commission, has set up an industrial estate at Barquisimeto. Small and medium industry development is part of the activities of the Corporation, a state agency set up by the Ministry of Development to promote economic development in general. The Corporation extends technical and financial assistance to small-scale and medium-sized industries; in particular, it may provide long-term loans, up to fifteen years, to enterprises able to offer adequate mortgages or guarantees. A form of hire-

purchase system for equipment and buildings is also in effect.

A local agency - CONDIMA (Compania para el Desarrollo de la Zona Industrial de Maracaibo) (Company for the Development of the Industrial Zone of Maracaibo) has set up an industrial area in Maracaibo and plans to provide on it a number of common service facilities.

Over 700 hectares (1730 acres) of land have been reserved by CONDIMA for development as an industrial zone; in a first phase, 150 hectares (370 acres) are being developed into 185 plots varying in size from 3,000 to 16,000 square metres (0.75 to 3.95 acres). Water, natural gas, electricity, sewerage and drainage, telephone and communications are available.

Improved plots are offered for sale at a price, including all services, of 10 bolivars per square metre ($2.20). Purchasers pay 28 per cent of the cost as a first instalment and the balance of 72 per cent in 36 monthly instalments, with interest on the unpaid balance at 7 per cent per annum. CONDIMA is prepared to consider other methods of payment, in particular a system of rental of fixed assets with purchase option. Under this scheme, the occupant pays a monthly rental of one per cent of the initial value of the land on the basis of a ten-year lease. At the end of the contract period, the property may be acquired at the original valuation less that portion of the rental which CONDIMA has credited towards the capital cost. Normally this means that the asset can be acquired by the occupant on payment of 42.65 per cent of the original cost.

A similar plan can be applied to plant and installation costs. In this case the term is eight years, the rental is 12.3 bolivars ($2.73) per month per 1,000 bolivars advanced. By the end of the contract period 90 per cent of the costs have been paid and the entrepreneur obtains a clear title to the plant on payment of the balance.

Enterprises on the area are exempted from industrial and commercial taxes during the first ten years. They are also entitled to concessions on construction taxes and water rates.

On an 18 hectare tract of the industrial area, CONDIMA plans to set up an industrial centre including quality control, material testing and food technology laboratories, a productivity institute, and a central mechanical

workshop. Administrative buildings, banks, cafeterias, libraries, insurance companies, shops, etc. will also be set up. Feasibility studies of the types of industries suitable for establishment have been carried out by two United Nations advisers, in particular to assess the need for, and type of, common service facilities.

Industrial areas have also been established in La Victoria and Cagua.

At Santo Tomé de Guayana, a new town being developed at the confluence of the Orinoco and Caroní rivers in south-eastern Venezuela by the Corporación Venezolana de Guayana (CVG), an autonomous public agency created by the Government in December 1960, several areas zoned for heavy and light industries, respectively, have been set up. The city is rapidly developing around several large industries - its population rose from 4,000 in 1950 to 42,000 in 1961 and to 70,000 in 1964, and is expected to reach 100,000 in 1966 and 400,000 by 1975.

The heavy industry area includes a large fully integrated steel plant, foundries and forges; chemical industries; an aluminium plant; construction materials industries; and heavy machinery industries.

Three "industrial parks" are set up for light manufacturing industries and for truck, storage and wholesale facilities: Matanzas, with 84 hectares (207 acres) and 47 plots; El Roble, with 7.4 hectares (18 acres) and 81 plots; and Airport, with 131 hectares (324 acres) and 33 plots. Additional industrial and commercial parks are being planned.

CVG is providing improved sites for sale or lease help in the preparation of feasibility and market studies and help in obtaining investment capital. The Corporación Venezolana de Fomento provides financial assistance: it may purchase a site, build a factory, and lease it to an industrialist with an option to buy; it may also provide equipment on hire-purchase. CVG may participate in joint ventures, though it prefers private enterprise to take the full initiative. CVG is establishing elementary, secondary and technical training schools, may assist in organizing specialized worker training programmes, and considers the creation of a technological institute. In certain cases, the Ministry of Development may grant customs duties exemptions for imports of equipment and materials not available domestically. Reduced

rates on power may sometimes be granted by CVG to large-scale consumers.

Among the small-scale industries already established in Ciudad Guayana, a certain number are producing materials or parts for the large machinery and construction industries; they include saw mills, clay product plants, cement product, brick and other building materials plants, machinery construction, assembly and repair shops, electrical component manufacturing, etc. Most of these enterprises employ ten to twenty workers each; some of them employ twenty-five to forty-five workers. With the expected increase in population, opportunities exist in food, footwear, clothing, furniture, household chemical and many other consumer industries.